

Capacity Building Platform for Livestock Management and Animal Health in the Global South



Program 2018-2019



Graduating courses

Animal epidemiology & Production

Master's degrees, CES



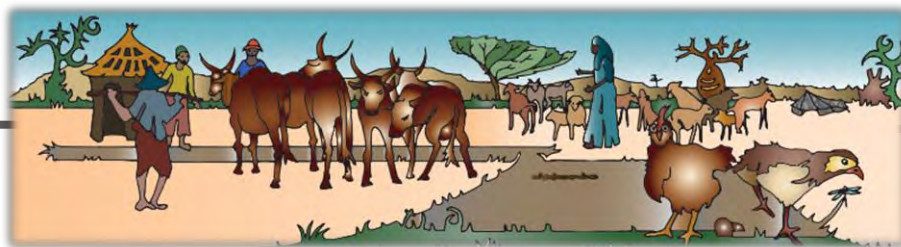
Modular trainings

Animal Health and Production in the
Global South



e-learning

Distance learning offer tailored to partners
from the Global South



The joint CIRAD/FVI platform, “Capacity Building for Livestock Management and Animal Health in the Global South”, is developing an international training offer, particularly in Southern countries, drawing on the expertise of FVI members and CIRAD research units.

This work is being carried out by France Vétérinaire International (FVI) in collaboration with 4 CIRAD research units working on animal production and health:

- (Astre) Animals, Health, Territories, Risks and Ecosystems
- (Selmet) Mediterranean and Tropical Livestock Systems
- (Isem) Montpellier Institute of Evolutionary Sciences
- (INTERTRYP) Host-Vector-Parasite-Environment Interactions in Neglected Tropical Diseases due to Trypanosomatids.

Training courses adapted to needs

Our degree and skills-training offer includes:

- ✓ first and second year Masters programs,
- ✓ 1 to 4 week module-based training courses,
- ✓ distance learning courses,
- ✓ customized training courses.

➤ *These products are built each year around animal production and health, and are oriented to countries in the southern hemisphere.*

Courses are mainly organized at CIRAD on the Baillarguet International Campus in Montpellier (France), but can be relocated abroad.

They are delivered primarily in French but sessions in English can be organized on request.

A large range of individuals are involved in the courses, with extensive contributions from senior scientists at CIRAD and its partners (members of FVI, INRA, ENVA, ENVIT, IRD, FAO, OIE, GDS, ANSES...).

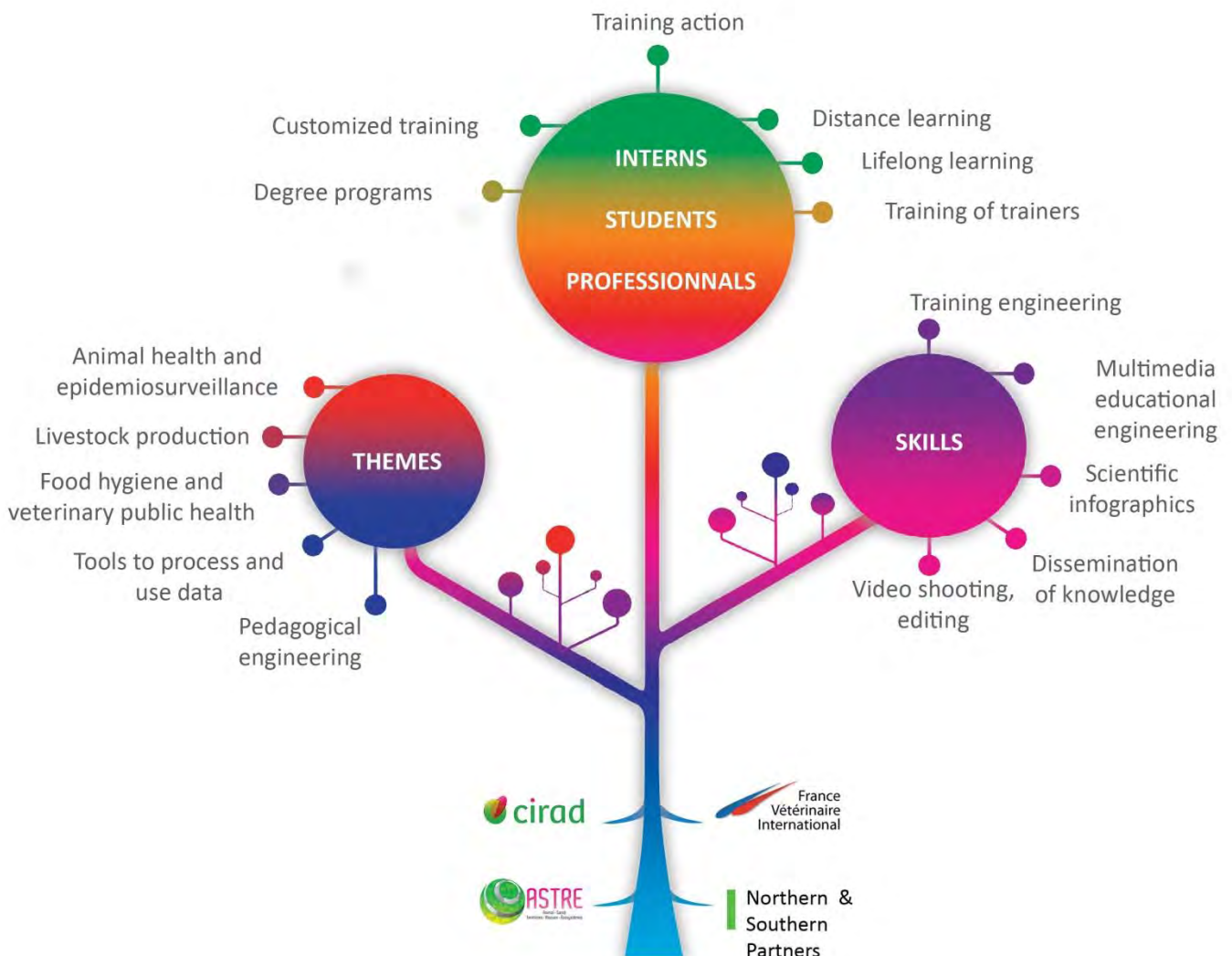
Tools and materials available

- 2 training rooms
- 1 computer room (22 computers)
- Videoconferencing equipment
- Interactive learning material
- Script writing software
- Animation and computer graphics software
- Content creation software in e-learning
- Publication software, site creation,...
- Distance Learning Platform (LMS)
- Audio and video capture set (cameras, editing station, drone)



Products and services

- ✓ Welcoming students from the North and South
- ✓ Reception of international delegations and Southern partners
- ✓ Supervision of field placements and internships in Southern countries
- ✓ Training engineering to set up international masters and customized training programs
- ✓ Organization of workshops, conferences, simulation exercises...
- ✓ Development of innovative training products (e-learning, MOOCs...)
- ✓ Creation of brochures, posters, educational kits...
- ✓ Creation of logos, graphics, public information and educational illustrations
- ✓ Production of teasers, educational films, video courses



Capacity Building Platform

for Livestock Management and
Animal Health in the Global South

Our Training Offer 2018-2019



Graduating courses



Modular trainings



e-learning

To consult our e-learning offer :

<https://formation-elevage-suds.cirad.fr/formations/e-formations/presentation>

We also offer tailor-made courses in Montpellier or in your own country.
Do not hesitate to contact us to build together trainings adapted to your
needs, in French, English or Spanish.

REGISTRATION

Cirad-FVI Capacity Building Platform
for Livestock Management and Animal
Health in the Global South

TA A-117/E

Campus International de Baillarguet
34398 Montpellier Cedex 5
France

Email : formation-emvt-fvi@cirad.fr

Phone : +33 (0)4.67.59.39.02



September 2018 to June 2019

This Master's degree specialization is organized by the National Veterinary School of Alfort (ENVA), the University of Paris Sud-Saclay, the University of Paris Est, and the Center for International Cooperation in Agronomic Research for Development (Cirad). The course trains participants in the primary methods for creating, facilitating and participating in an Epidemiological Surveillance Network of Human and Animal Diseases. It is a specialization taken in the second year (M2) of the Master of Public Health program. In addition to teachers and researchers from the organizing institutions, professionals from various agencies participate in the training, such as the French Agency for Food, Environmental and Occupational Health and Safety (ANSES) and Santé Publique France. Numerous conferences also are organized with the Institute of Research for Development (IRD), General Directorate for Food (DGAL), Pasteur Institute, livestock health protection groups (GDS), World Organisation for Animal Health (OIE), Food and Agriculture Organization (FAO), Agronomists and Veterinarians Without Borders (AVSF), the French National Institute for Agricultural Research (INRA)...

Course objectives

By the end of the course, participants should be able, in the field of epidemiology applied to the surveillance of human and animal diseases, to:

- present and use specific procedures of descriptive epidemiology, analytical epidemiology and evaluative epidemiology;
- use current tools of epidemiology (information technology, bio-statistics, risk analysis and geographic information systems);
- participate effectively in the various stages of an epidemiological survey, from drafting protocols to analysing data;
- contribute to epidemiological surveillance activities: establish specifications for the development of a disease surveillance plan and develop a training plan for network actors; facilitate epidemiological surveillance activities; manage and process epidemiological surveillance data in both public and animal health (especially for vector-borne diseases);
- contribute to the evaluation of epidemiological surveillance networks;
- provide an epidemiological contribution to the preparation, implementation and evaluation stages of disease control programs;
- use risk analysis and geographic information systems.

Cost

- Single registration: €1 680
- Veterinary student: €840
- Professional training: €5 500

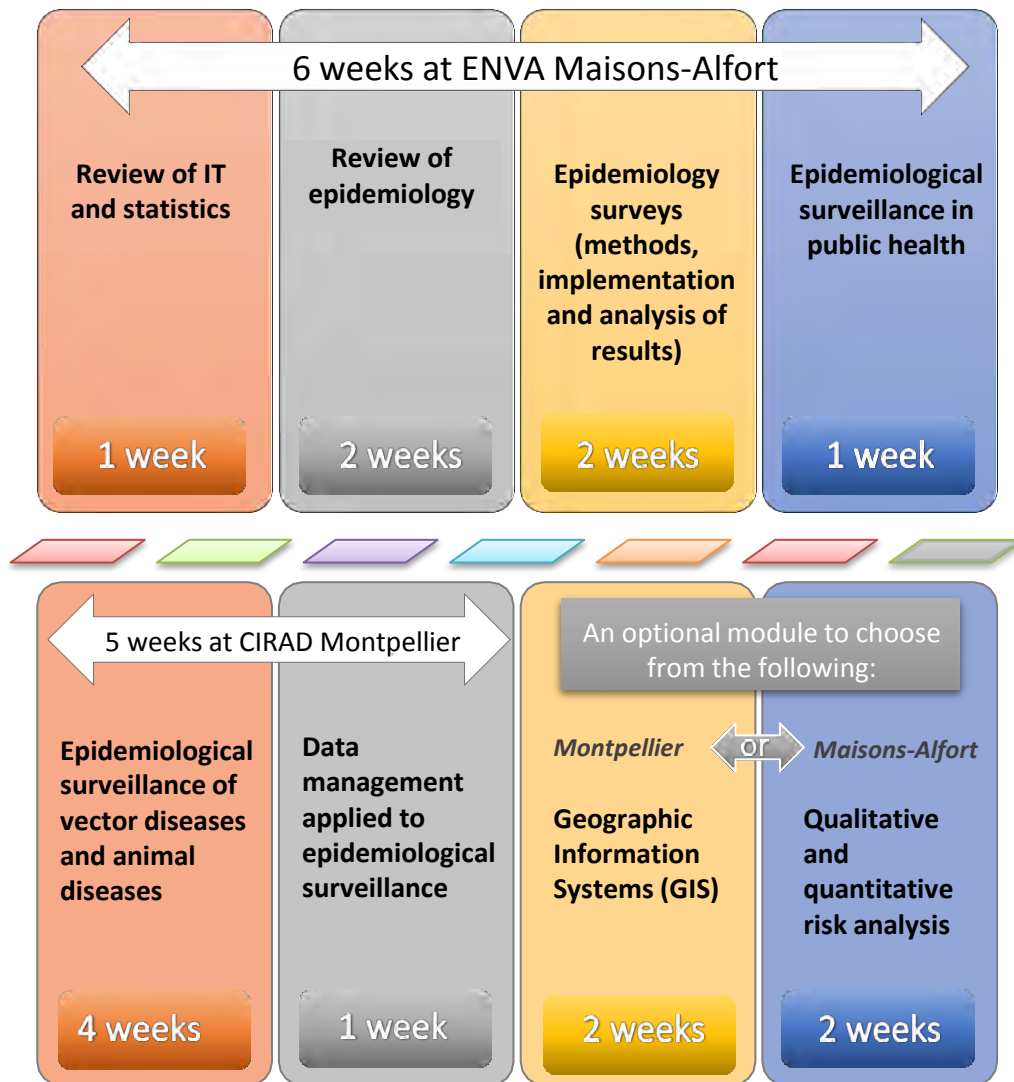


Program

Theoretical and practical instruction is provided full-time over 4.5 months, with courses divided between Maisons Alfort and Montpellier. A 5.5 month internship on a concrete epidemiological surveillance project within a professional structure then follows.



From September to January



From January to June

5.5 month end-of-studies professional internship

Admission and registration

Applicants either must hold a Bac +5 degree or the equivalent in the field of health sciences, or be able to demonstrate sufficient professional experience.

The pre-registration form is available on the site: <http://aeema.vet-alfort.fr> under "Enseignements", followed by "CES-Master". It must be completed carefully and returned by email to barbara.dufour@vet-alfort.fr.

A detailed and personalized estimate can be obtained on request.

No application will be considered after 15 June 2018 (date of receipt of the application).

Funding

The institutions organizing the master's program cannot provide scholarships. Admission to M2 (second year of the master's program) does not mean that a scholarship will be awarded to successful applicants.

Important : Without waiting for admission to the program, foreign applicants should apply as soon as possible for funding from the competent national authorities in charge of livestock and/or the granting of scholarships, Cooperation and Cultural Action Services of French Embassies (SCAC), embassies of other countries, international organizations (FAO, UNDP, European Union, IAEA, IDB...), development projects or non-governmental organizations...

*CIRAD is an OIE collaborating center for the diagnosis and control of animal diseases in tropical areas.
The organization of training courses in this field is part of its mandate.*

September 2018 to July 2019

The National Veterinary School of Toulouse and the University Toulouse III Paul Sabatier, in collaboration with the Center for International Cooperation in Agricultural Research for Development (Cirad, Montpellier), offer this Master's specialization on "Integrated Management of Tropical Animal Diseases". The course prepares graduates for positions as consultants, project managers and study coordinators in the public (regional, national and international health agencies) and private (pharmaceutical and agro-food industries, livestock breeding centers) sectors. They may also pursue a career in scientific research by continuing with a PhD program.

Course objectives

Scientific objectives

Develop expertise in the management of animal diseases and population health to be able to propose methods for the prevention and control of tropical animal diseases. These methods are part of an interdisciplinary approach to epidemiological systems.

Professional objectives

- Train specialists in the risks of emergence and spread of animal and zoonotic diseases in Mediterranean and tropical countries
- Train animal health epidemiology researchers

By the end of the program, participants will be able to:

- identify and describe animal diseases in tropical systems;
- describe, compare and analyze the health of populations;
- set up prevention and control measures for tropical animal diseases;
- take into account relevant environmental and socio-economic parameters in a One Health approach.

The skills acquired during this training program can be used effectively in countries of the North and South.

Audience

The GIMAT master's program welcomes veterinarians who hold a DEFV (Diplôme d'Etudes Fondamentales Vétérinaires/Diploma of Fundamental Veterinary Studies) and individuals with other educational backgrounds (agri-food or agricultural engineering schools, pharmacists, university graduates who have completed the first year (M1) of a master's program in biological sciences, other degrees deemed equivalent by the master's teaching committee). Applications from foreign students and professionals with equivalent degrees are also welcome.

Most of the program is taught in French, but some articles and presentations also require an intermediate level in English.

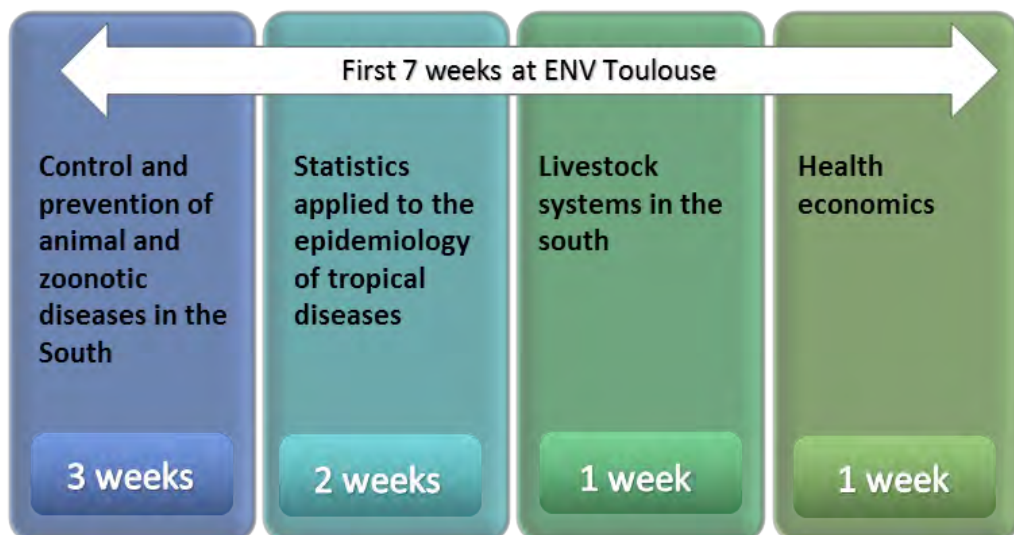
Program



The applied theoretical training program begins with common core courses given in two locations (Toulouse and Montpellier). It is supplemented by hands-on training in the form of a 5.5 month internship in a structure approved by the teaching committee, in France or abroad.

This internship is validated by a written report followed by an oral presentation.

From September to January



From January to mid-June

5.5 month end-of-studies professional internship

Graduating course

Applications

You are French or an international student currently in France:

Send your CV and a letter of motivation in French to dep@envt.fr

You are foreign:

Check if your country falls under the Campus France procedure by consulting the list of countries on the following website: <https://www.campusfrance.org/fr/procedure-etudes-en-France>

- If this is the case, it is advisable to start the process a year in advance. Select the "Biologie Santé" (Health Biology) Master at Toulouse III Paul Sabatier University, GIMAT Specialisation, M2.

In parallel, send your CV and letter of motivation in French to formation-emvt-fvi@cirad.fr

- If your country does not fall under the Campus France procedure, send your CV and letter of motivation in French to formation-emvt-fvi@cirad.fr

No registration will be accepted after 28 May 2018.

Costs

- Veterinary student at a French national veterinary school holding a DEFV (fundamental veterinary studies diploma): tuition fees in effect for the year following the initial veterinary training (registration at ENVT, the institution organizing the course for the Biology-Health specialization of the University of Toulouse)

+ registration fees for the second year (M2) of the master's program.

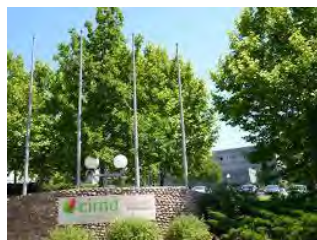
- Other students: registration fees for the second year (M2) of the master's program.

- Professional training:

Funded by a donor agency: €7 000;

Self-funded or individuals seeking employment: €3 350

- Foreign professional (veterinarian or equivalent diploma): registration fees in M2 + €4 800 in tuition fees if supported by a funding agency.



Funding

The institutions organizing the master's program cannot provide scholarships. Admission to M2 (second year of a master's program) does not mean that a scholarship will be awarded to successful applicants.

Important :

Without waiting for admission to the program, foreign applicants should apply as soon as possible for funding from the competent national authorities in charge of livestock and/or the granting of scholarships, Cooperation and Cultural Action Services of French Embassies (SCAC), embassies of other countries, international organizations (FAO, UNDP, European Union, IAEA, IDB...), development projects or non-governmental organizations...



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September 2018 to January 2019

The National Veterinary School of Alfort (ENVA), in collaboration with the Center for International Cooperation in Agricultural Research for Development (Cirad, Montpellier), offers a postgraduate certificate in epidemiology (CES). The course, which leads to a degree from ENVA, trains participants in the primary methods for creating, facilitating and participating in an epidemiological surveillance network of animal diseases.

In addition to teachers and researchers from the organizing institutions, professionals from various agencies participate in the training, such as the French Agency for Food, Environmental and Occupational Health and Safety (ANSES) and Santé Publique France. Numerous presentations also are organized with the Institute of Research for Development (IRD), General Directorate for Food (DGAL), Pasteur Institute, livestock health protection groups (GDS), World Organization for Animal Health (OIE), Food and Agriculture Organization (FAO), Agronomists and Veterinarians Without Borders (AVSF)...

Theoretical and practical instruction is provided full-time over 4.5 months between Maisons Alfort and Montpellier, followed by an internship with a minimum duration of 2 weeks.

Participants must be released from all professional obligations.

Course objectives

By the end of the training, participants should be able, in the field of epidemiology applied to communicable diseases, to perform the following tasks:

- present and use the specific procedures of descriptive epidemiology, analytic epidemiology and evaluative epidemiology;
- use existing epidemiological tools (information technology, bio-statistics...);
- participate effectively in different stages of an epidemiological investigation covering a single outbreak, a set of outbreaks, or a region;
- contribute to epidemiological surveillance activities, in particular to develop specifications for the creation of an epidemiological surveillance network, establish a training plan for the actors of a network, and conduct epidemiological surveillance activities;
- manage and process data generated by epidemicsurveillance;
- perform technical and economic assessments of epidemiological investigations and contribute to those of an epidemiological surveillance network;
- provide an epidemiological contribution to the preparation, implementation and evaluation stages of disease control programs;
- use risk analysis and geographic information systems.

Cost

- Single registration: €2 000
- Professional training: €5 500



Admission and registration

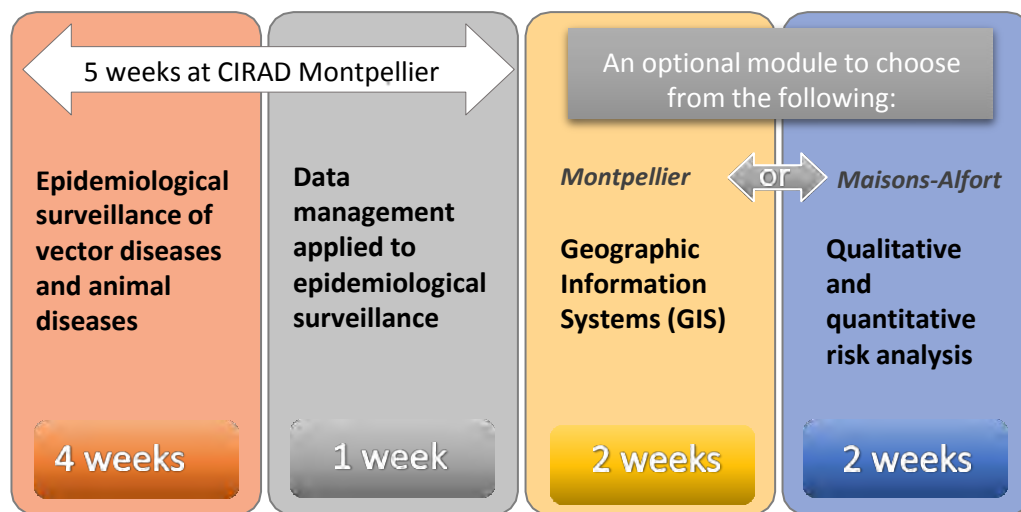
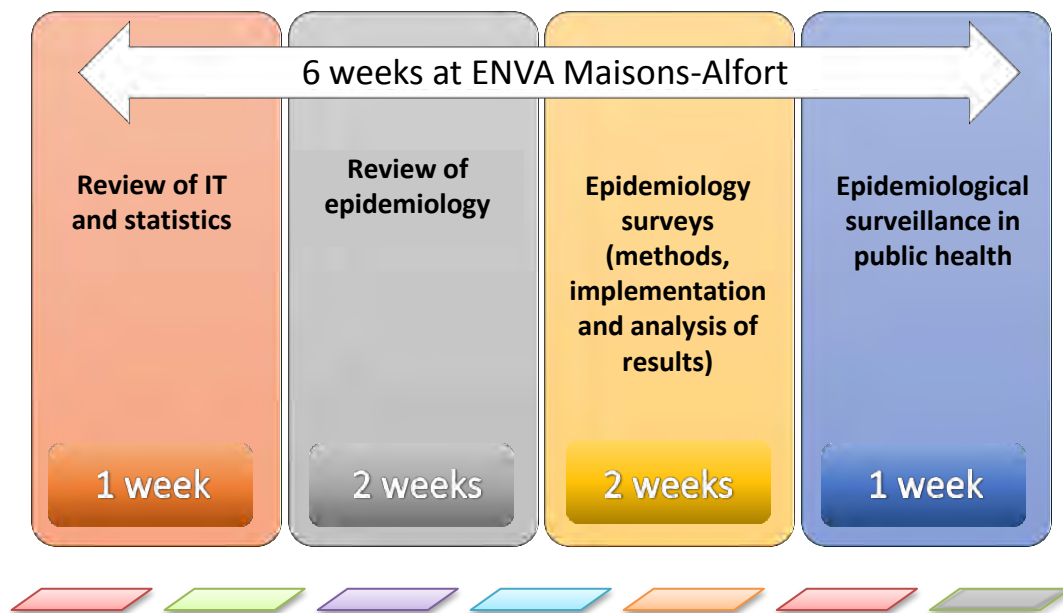
Applicants must either hold a Bac +5 degree or the equivalent in the field of health sciences, or be able to demonstrate sufficient professional experience.

Application files can be downloaded from the website: <http://aeema.vet-alfort.fr>, under "Enseignements" followed by "CES/Master".

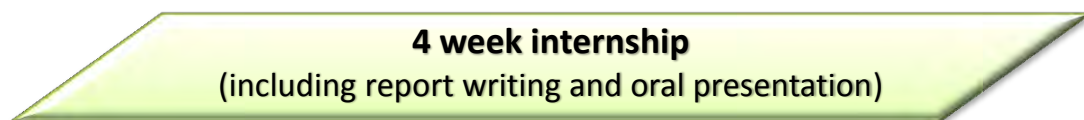
They must be carefully completed and returned by email (anne.praud@vet-alfort.fr) **before 15 June 2018** accompanied by a letter of motivation in French.



From September to January



Between January and June



This CES may be completed over one, two, or at most three years of study.

Funding

The institutions organizing cannot provide scholarships. Admission to CES does not mean that a scholarship will be awarded to successful applicants.

Important : Without waiting for admission to the program, foreign applicants should apply as soon as possible for funding from the competent national authorities in charge of livestock and/or the granting of scholarships, Cooperation and Cultural Action Services of French Embassies (SCAC), embassies of other countries, international organizations (FAO, UNDP, European Union, IAEA, IDB...), development projects or non-governmental organizations...



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Food Safety and Veterinary Public Health in the South

(Delivered in French)

Scientific coordinator

E. CARDINALE
(Cirad UMR ASTRE)



2 weeks
4 to 15 February 2019

Questions concerning quality in animal production chains are becoming increasingly important from the perspective of both public health (fight against the contamination of consumers) and economics (lifting of export restrictions).

Following episodes involving mad cow disease, listeria in pregnant women, and E. coli O157: H7, which causes bloody diarrhea in children, consumers around the world are more than ever concerned by the quality of the food on their plates.

In a context of growing urbanization, many countries in tropical and semi-tropical regions are developing intensive farming and short supply chains to feed urban consumers. Street restaurants are flourishing, especially in capital cities. Some countries are also seeking to develop tourism and hospitality services.

However, quality has different dimensions that must be understood. It is built over the entire value chain, from the production stage to processing and delivery to consumers. Research to improve quality therefore requires the implementation of appropriate methods and tools as part of a comprehensive approach integrating the different levels of the industry and all of the stakeholders.

This module aims to provide participants the necessary skills to implement this approach in the main livestock production sectors in tropical and semi-tropical regions, using lessons, case studies and site visits.

Course objectives

At the end of the course, participants will be able to :

- make a diagnosis at the level of an animal production chain;
- implement quality control methods at different levels of an animal production chain;
- propose measures related to methods and the organization of quality control to strengthen the reliability of official control services;
- advise agribusinesses about food assurance and food safety as well as the assessment and management of risk;
- contribute to the development of a mechanism or legislative and regulatory framework compatible with international standards, in particular those of the European Union;
- enhance the quality approach in animal production sectors.

Audience

This course is open to veterinarians, agronomists and engineers working in the fields of hygiene and quality of food of animal origin who wish to strengthen their skills. It also may be taken by individuals who do not belong to these categories but have sufficient professional experience.

Candidates must have a good command of French.



This module is shared with the master's programme « Livestock systems » (Masters 3A)

Partnerships

With the participation of the National Veterinary School of Alfort, National School of Veterinary Services, the UMR Qualisud CIRAD and the Ministry of Agriculture.

Cost

- Training course : €1,300
- Travel to Montpellier : to be determined by the participant
- Housing expenses : allow a minimum of about €90/day

If necessary, a customized estimate can be established upon request, especially when two or more courses are followed.

Important

CIRAD cannot provide study grants. If you wish to request a grant, submit an application as soon as possible to national authorities in charge of livestock and/or scholarships; Cooperation and Cultural Action Services (SCAC) of your local French Embassy; the embassies of other countries; international organizations (FAO, UNDP, EU, IAEA, IDB ...); development projects or NGOs.

Application procedure

Applications, consisting of a detailed resume, a motivation letter and details about the organization managing your grant, must be sent if possible before

14 December 2018

by email to: formation-emvt-fvi@cirad.fr



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CIRAD-FVI – Capacity Building Platform for Livestock Management and Animal Health in the Global South
formation-emvt-fvi@cirad.fr

Programme (indicative)

- Framework and context (standards, precautionary principle, costs, quality brands...)
- Tools to control sanitary quality (HACCP, ecopathology, risk analysis, training...)
- Chain analysis (milk, meat, monogastrics, fish...)
- Official control services (organization of services, methods for official control)
- Case studies (group work)
- Site visits:

Poultry slaughterhouse

Fish auction market





Integrated management of wildlife and associated health risks the Global South

(Training delivered in French)

Scientific coordinator:

Ferran JORI
(Cirad UMR ASTRE)

2 weeks

18 to 30 March 2019



Natural ecosystems provide essential services to rural communities in countries in the southern hemisphere. Their biodiversity often represents sources of water, food, essential nutrients, medicine, fuel, energy, livelihoods and irreplaceable cultural and spiritual enrichment which have a fundamental impact on human health.

However, this biodiversity is currently facing major transformations (climate change, deforestation, overexploitation of natural environments, heightened trade) that are fostering increasingly frequent interactions between wildlife, domestic animals and humans. These interactions facilitate exchanges of pathogens between these different host compartments and can precipitate the emergence of infectious diseases that can have a colossal impact on livestock, public health and the conservation of endangered species.

Consequently, the number of emerging infectious diseases that have an epidemiological link with wildlife has greatly increased in recent decades, promoting the emergence of major health crises, locally and internationally (avian influenza, Ebola, HIV). These diseases reflect interactions between different hosts (pathogens, vectors, animals, humans) in a context of complex and interlocking socio-ecosystems, highlighting (i) the importance of wildlife in the socio-ecosystems of countries of the South, ii) the health risks linked to the use of wildlife on human and animal health, and iii) the relevance of a multidisciplinary and integrated approach to understand the risks of emergence of wildlife-related diseases in complex socio-ecosystems.

Training objectives

This training course offers an overview of the integrated management of wildlife and health risks inherent in interactions between wildlife species, domestic species and humans, taking the perspective of different disciplines, such as ecology, epidemiology, sociology and economics.

The course aims to:

- present the various wildlife use and management systems existing in countries of the South and the health risks related to these use practices;
- convey a multidisciplinary vision of socio-ecosystems' functioning and its relationship with disease emergence;
- demonstrate the importance of an integrated approach to wildlife management and its potential impact on public, animal and environmental health;
- present a range of tools and approaches to better understand, study and understand issues related to wildlife health and their impact;
- demonstrate the links between environmental and socio-economic changes and the emergence of infectious diseases.

Modular training

Audience

This training is open to human and animal health professionals, natural resource managers and agronomists involved in training, research or supervision in the fields of rural development, natural resource management and the exploitation of wildlife in southern countries.



Programme

- Presentation of different management systems and optimizing wildlife in southern countries
- Presentations of the concepts of integrated approaches to health (One Health, EcoHealth, Global Health...) in connection with transitions of agricultural systems and ecosystem services
- Case study of wildlife diseases with importance for animal and human health (Ebola, foot-and-mouth disease, HIV, African swine fever, Nipah virus...)
- Human-wildlife conflicts and their socio-economic and environmental impact
- Qualitative tools and methods for the design and implementation of socio-ecosystem approaches (societal, health and environmental interactions)
- Tools and approaches applied to the epidemiological study of wildlife (surveillance, risk analysis, field data collection, molecular tools)
- Introduction to ecological tools for studying wildlife and the ecology of transmission (telemetry, camera traps, drones, molecular biology...)

Field visits

Important

CIRAD cannot provide study grants. If you wish to request a grant, submit an application as soon as possible to national authorities in charge of livestock and/or scholarships; Cooperation and Cultural Action Services (SCAC) of your local French Embassy; the embassies of other countries; international organizations (FAO, UNDP, EU, IAEA, IDB ...); development projects or NGOs.

Applications

Applications, consisting of a detailed resume, a motivation letter and details about the organization managing your grant, must be sent by email:

formation-emvt-fvi@cirad.fr.



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Partnerships

This training is organized in close collaboration with OIE (WAHIS network-Working Group on Wildlife), ONCFS (Wildlife surveillance - SAGIR network), IRD MIVEGEC, GRET, CNRS and ENVT.

Cost

- Training cost : €1,300
- Travel to Montpellier : to be determined by the participant
- Housing expenses : allow a minimum of €90/day

If needed, and especially when several training modules are involved, a customized estimate can be established upon request.



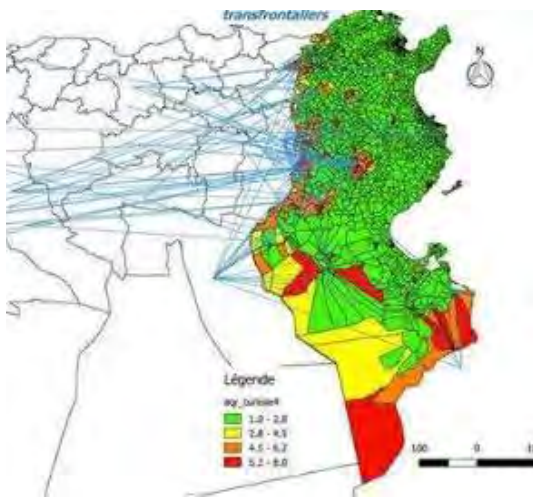
Qualitative Risk Mapping Analysis Optimization of monitoring systems on transboundary diseases

(Delivered in English)

Scientific coordinators

Caroline Coste & Cécile Squarzoni-Diaw
(Cirad UMR ASTRE)

**1 to 2 weeks in France, Montpellier
19-23 and 26-30 March, 2018**



In order to optimize risk-based surveillance of animal diseases, a method developed by CIRAD integrates a risk mapping approach linked to animal mobility and risk assessment.

The principal objective of this training program is to reinforce national capacities and to assist the vet services or animal health actors of specific countries to prevent the introduction and the spread of diseases in the field and to detect new outbreaks with risk-based surveillance systems. This method can be applied to zoonotic diseases and used by public health experts. The aims of these training program are in particular to acquire gradually tools and methods to manipulate animal flows information and identify the risks associated with them. The training will deal with data collection, processing of technical and statistical analysis, handling geospatial information and cartographic visualization and finally risk assessment, risk mapping and risk-based surveillance. Veterinaries and animal health workers learn different tools for handling animal flows information and methods to estimate the highest risk factors (movements, periods, regions...). Finally, they are able to produce risk maps for targeted diseases such as Highly Pathogen avian Influenza, Rift Valley Fever, Foot-and-mouth disease, Peste des petits ruminants.

The 1st session (5 days) will cover data collection (protocols design and data collection on tablet), processing of technical and statistical analysis, handling geospatial information and cartographic visualization (GIS tools).

The 2nd session (5 days) will be devoted to an introduction to risk mapping, risk assessment and risk-based surveillance methods.

Educational objectives

At the end of the 1st training week, participants will be able to:

- Master all basic functions of QGIS software for handling geospatial information and creating maps;
- Collect, visualize and analyze animal (or human) movements

At the end of the 2nd training week, participants will be able to:

- Assess risk of a disease, analyze and map it (risk assessment)
- Finally design risk based surveillance protocols according to a specific country context and national monitoring system.

Admission

To attend the course, the candidate must

Week 1 : Hold a diploma in veterinary medicine or public health, or hold a degree in agronomy, a master's degree compatible with the subject of the course, a diploma in agricultural or medicine work engineering, or equivalent. This course may be taken by candidates not belonging to these categories, but justifying sufficient professional experience.

Candidates must be proficient in English and have basic computer skills (knowledge of the Windows environment) as well as in the basic office concepts: File Management, Word, Excel.

Week 2 : Know the basic use of QGIS and SNA

Material provided

- PowerPoint presentations, computers. All softwares are free and will be pre-installed.
- It is essential for the second week, that the participants bring their own datasets on the animals movements (national or/and transboundary) and possibly any information such as the list of municipalities, water points, markets and epidemiological data (outbreaks, vaccination coverage linked to a priority disease).

If participants can't provide their own information on animal movements, examples of other countries will be taken.

Training costs

- Training costs : 1 500 € per week or 2 800 € for 2 weeks
- Travel towards Montpellier : not included, to be covered by participants
- Housing expenses : not included, plan a minimum of 80 € a day

If necessary, a customized quote can be established upon request.

Important

CIRAD cannot provide study grants. If you wish to request a grant, submit an application as soon as possible to national authorities in charge of livestock and/or scholarships; Cooperation and Cultural Action Services (SCAC) of your local French Embassy; the embassies of other countries; international organizations (FAO, UNDP, EU, IAEA, IDB ...); development projects or NGOs.

Application procedure

Applications, consisting of a detailed resume, a motivation letter and details about the organization managing your grant, must be sent as far as possible before **February 23th, 2018**

by email to : formation-emvt-fvi@cirad.fr

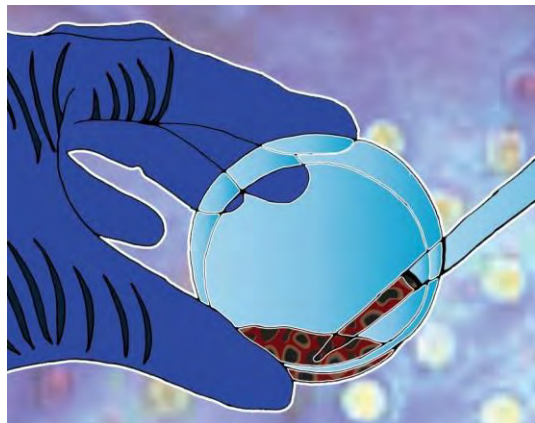


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Principles of animal cell culture workshop

(Delivered in English or in French)

Scientific coordinators

I.CHANTAL - C.MINET
(Cirad/IRD UMR INTERTRYP)

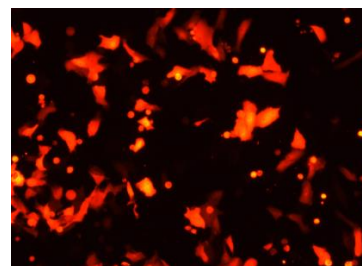
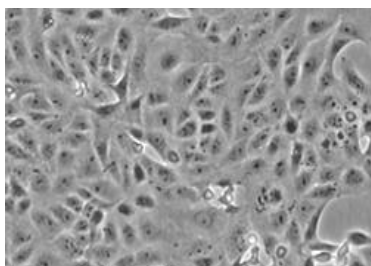
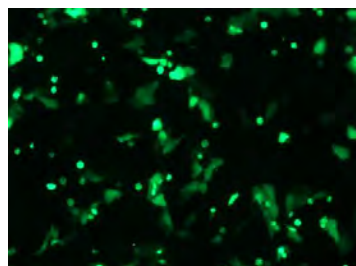


2 weeks

between October and April

(dates to be determined based on demand)

Cell culture is a set of biological techniques used to grow cells outside their organism (ex vivo) or their natural environment. This tool is increasingly required to validate protocols prior to conducting animal experiments.



Course objectives

The main objective of this workshop is to acquire the theoretical and practical principles of animal cell culture.

Organisation of the Workshop

- The workshop can be held at Cirad in Montpellier (France) (Baillarguet International Campus). Number of participants: maximum 4 to 6.
- It may also take the form of an itinerant training course by invitation: Payment of travel expenses, accommodation and expertise of the trainer(s) by the host organization with the provision of a laboratory equipped with at least one PSM and a CO2 incubator for the practical part of the workshop.
- A multiple choice quiz at the end of the session serves to assess what has been learned.



Audience

This workshop is for students, technicians, engineers and anyone wishing to learn the principles and good practices in cell culture that are needed to operate and/or to set up a cell culture laboratory.

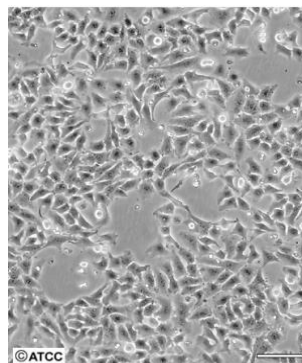
Prerequisites: ideally, knowledge of animal cell structure and laboratory work (use of micropipettes)



Programme

The workshop is spread over two consecutive weeks attended full time. This training program consists of theoretical courses, tutorials and practical work on the following topics:

- introduction to animal cell culture,
- understanding of animal cell culture conditions,
- conservation of animal cells,
- transformation of animal cells,
- acquisition of correct cell culture laboratory practices.



Cost

- Training at Cirad in Montpellier (France) : €2,500
- Itinerant training by invitation : contact us
- Housing expenses : allow a minimum of €90/day

If necessary, and especially when two or more courses are taken, a customized estimate can be established upon request.

Important

CIRAD cannot provide study grants. If you wish to request a grant, submit an application as soon as possible to national authorities in charge of livestock and/or scholarships; Cooperation and Cultural Action Services (SCAC) of your local French Embassy; the embassies of other countries; international organizations (FAO, UNDP, EU, IAEA, IDB ...); development projects or NGOs.

Application procedure

Applications, consisting of a detailed resume, a letter of motivation and details about the organization managing your grant, must be sent to:

formation-emvt-fvi@cirad.fr



See our other trainings : <http://formation-elevage-suds.cirad.fr>

*CIRAD is an OIE collaborating centre for the diagnosis and control of animal diseases in tropical areas.
The organization of training courses in this field is part of its mandate.*



Methodology of epidemiological surveillance

(Delivered in French)



Scientific coordinators

P.HENDRIKX (ANSES)

M. PEYRE - C. SQUARZONI (Cirad UMR ASTRE)

4 weeks

29 October - 23 November 2018

Epidemiological surveillance is a mean to collect reliable health information used in decisions to fight against animal diseases. As such, it is an essential tool for national veterinary services.

The quality of this health information depends directly on the quality of the design, organization and coordination of surveillance systems. In a context of globalized trade, these systems must continuously adapt to both changes in animal husbandry systems and the emergence of new diseases, especially zoonoses.

Setting up a surveillance system involves federating public and private animal health stakeholders around shared and formal objectives, activities and procedures. This organization must meet international standards codified by, among others, the World Organization for Animal Health (OIE). Methods and tools for implementing surveillance systems are available and have proven their worth in many countries in the North and South. The acquisition of skills to design and manage an epidemiological surveillance network has thus become a priority for veterinary services and general health services dedicated to the surveillance of pathogens.

Educational objectives

By the end of the course, participants will have reviewed the basic principles of epidemiological surveillance applied to animal diseases and zoonoses. They should be able to:

- design and organize an epidemiological surveillance network;
- develop and implement epidemiological surveillance activities adapted to different economic and health contexts;
- plan, organize and conduct activities in the field to establish and operate an epidemiological surveillance network;
- develop and conduct training initiatives and internal and external communication activities as part of the regular operations of the surveillance system;
- evaluate the quality and performance of an epidemiological surveillance network and the costs associated with its operation.

Modular training

Audience

This course is open to veterinarians and zootechnicians, doctors, and health professionals responsible for setting up and operating epidemiological surveillance networks. Wildlife professionals are also welcome to participate.

Candidates who do not belong to these categories but who have sufficient professional experience in health surveillance may take the course as well.

All candidates must have a good command of French.



Programme

- Design of an epidemiological surveillance network
- Field actors and agents
- Evaluation of a network
- Training and communication
- Case studies, practical tutorials



This module is part of the SEMHA and GIMAT master's programmes.

Cost

- Training cost : €2,400
- Travel to Montpellier : to be determined by the participant
- Housing expenses: : allow a minimum of €90/day

If needed, a customized estimate can be established upon request, especially when two or more courses are involved.



Important

CIRAD cannot provide study grants. If you wish to request a grant, submit an application as soon as possible to national authorities in charge of livestock and/or scholarships; Cooperation and Cultural Action Services (SCAC) of your local French Embassy; the embassies of other countries; international organizations (FAO, UNDP, EU, IAEA, IDB ...); development projects or NGOs.

Application procedure

Applications, consisting of a detailed resume, a motivation letter and details about the organization managing your grant, must be sent if possible before:

21 September 2018

by email: formation-emvt-fvi@cirad.fr



See our other trainings : <http://formation-elevage-suds.cirad.fr>

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Diagnostic techniques for CBPP (and/or CCPP)

(Delivered in French & English)

Scientific coordinator

F. THIAUCOURT
(Cirad UMR ASTRE)



1 week

06 to 13 November 2019

Contagious bovine pleuropneumonia (CBPP) is on the list drawn up by the Office International des Epizooties (OIE) of diseases with a major impact on livestock or representing a major constraint to international trade. CBPP is caused by a mycoplasma, *Mycoplasma mycoides* subsp. *mycoides* SC.

This disease is characterized by respiratory symptoms and pleurisy and pneumonia lesions. These lesions can progress to a chronic stage and animals bearing them, while hardly detectable by clinical observation, are a source of reinfection for healthy herds.

Until recently, the fight against CBPP relied on mass vaccination campaigns, often associated with ones directed against rinderpest. These campaigns are costly due to the need for annual vaccination boosters. As a result, the vaccination effort is difficult to maintain in Africa and the number of outbreaks is increasing.

The use of laboratory diagnosis is essential, both to confirm the suspicion of CBPP, but also to measure the impact of the disease on livestock and thus to be able to develop appropriate control strategies. The laboratory diagnosis presents no major technical difficulties but it requires real practical experience in order to be performed correctly. The same is true for Contagious caprine pleuropneumonia (CCPP).

Training objectives

This technical training course can be developed for CBPP and/or CCPP.

At the end of the training, participants will be able to:

- perform serological analyses of CBPP (CCPP) by cELISA technique (IDEXX), learn the basics of quality control in this field and know how to interpret the results;
- isolate and identify the agent of CBPP (CCPP) by conventional techniques (biochemical tests, growth inhibition) and analyze the difficulties encountered in the field;
- perform the titration of a vaccine against CBPP (PPCC);
- describe the principles of the PCR technique applied to CBPP (PPCC) for rapid diagnosis.

Modular training

Audience

This course is open to persons directly involved in the diagnosis of CBPP / CCPP (veterinarians, laboratory technicians).

Candidates must have a good command of French.

Upon request, English sessions or sessions relocated within partner institutions can be organized if a sufficient number of participants are present (at least 5).

The date and duration of the training can also be adapted as needed.



Programme



The programme alternates between theory and practice to enable participants to become familiar with serological and bacteriological techniques

- | | |
|------------|----------|
| ■ Theory | 15 hours |
| ■ Practice | 15 hours |

Cost

- Training cost : €1,300
- Travel to Montpellier : to be determined by the participant
- Housing expenses : allow a minimum of €90/day

If needed, and especially when several successive training modules are involved, a customized estimate can be established upon request.



Important

CIRAD cannot provide study grants. If you wish to request a grant, submit an application as soon as possible to national authorities in charge of livestock and/or scholarships; Cooperation and Cultural Action Services (SCAC) of your local French Embassy; the embassies of other countries; international organizations (FAO, UNDP, EU, IAEA, IDB ...); development projects or NGOs.

Applications

Applications, consisting of a detailed resume, a motivation letter and details about the organization managing your grant, must be sent if possible before:

6 October 2019

by email: formation-emvt-fvi@cirad.fr



See our other trainings : <http://formation-elevage-suds.cirad.fr>

*CIRAD is an OIE collaborating centre for the diagnosis and control of animal diseases in tropical areas.
The organization of training courses in this field is part of its mandate.*

Diagnostic techniques for Peste des petits ruminants

(Delivered in English)

Scientific coordinator

A.BATAILLE - G. LIBEAU
(Cirad UMR ASTRE)

4 days

19 to 22 november 2018



Peste des petits ruminants (PPR) is a highly infectious viral disease of small wild and domestic ruminants. In livestock farming areas where the disease is enzootic, it causes significant economic losses due to high morbidity and mortality rates. PPR affects nearly one billion small ruminants around the world.

The causative agent is PPRV, which belongs to the Morbillivirus genus, Paramyxoviridae family. Serological diagnosis is conventionally undertaken using competitive ELISA (cELISA). As virus isolation is difficult to achieve in less than three weeks, other methods, including gene amplification, are used to rapidly identify the virus directly from field samples. These methods, which are very sensitive and specific, are conventional reverse transcription-PCR (RT-PCR) and real time RT-PCR (rRT-PCR). Conventional RT-PCR provides a template for sequencing and subsequent phylogenetic analysis while rRT-PCR is used to quantify viral loads.

Course objectives

The course focuses on teaching the different methods classically implemented for serological and molecular diagnosis of PPR. This training programme presents standardized protocols and procedures as well as the instructions for using the necessary equipment.

The specific objectives are to provide:

- training in serological diagnosis of PPRV
- knowledge about OIE reference protocols for serology (i.e., virus neutralisation and cELISA)
- training in molecular diagnosis of PPRV
- knowledge about different RT and rRT-PCR procedures
- information about molecular sequencing and phylogenetic analysis of PPRV

At the end of the training, participants should be able to establish a diagnosis in their own laboratory, reproduce the methods learned, and train and support laboratory staff.



Modular training

Audience

Participants must be actively involved in the diagnosis of animal diseases and have experience in molecular biology techniques. Basic theoretical knowledge in PCR is required. Candidates must also have a good command of English, or, failing that, French. The number of participants is strictly limited to six. Upon request, sessions can be relocated within partner institutions if a sufficient number of participants are present and the schedule of the reference laboratory allows it.



"Crédit photo CIRAD"

Programme

- The programme alternates between theoretical presentations and practical training (serology, virus titration, conventional and real time PCRs).



"Crédit photo CIRAD"

Cost

- Training course : €1,600
- Travel to Montpellier : to be determined by the participant
- Housing expenses : allow a minimum of about €90/day

If needed, a customized estimate can be established upon request, especially when two or more courses are involved.

Important

CIRAD cannot provide study grants. If you wish to request a grant, submit an application as soon as possible to national authorities in charge of livestock and/or scholarships; Cooperation and Cultural Action Services (SCAC) of your local French Embassy; the embassies of other countries; international organizations (FAO, UNDP, EU, IAEA, IDB ...); development projects or NGOs.

Modalités de candidature

Applications, consisting of a detailed resume, a motivation letter and details about the organization managing your grant, must be sent if possible before:

19 October 2018

by email: formation-emvt-fvi@cirad.fr



See our other trainings : <http://formation-elevage-suds.cirad.fr>

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Diagnosis PPR course: PRACTICE ASSESSMENT FORM



1 - Do you have any technical experience in Molecular Biology?

- ☐ YES
- ☐ NO

If yes, length of experience, specifying the year:

.....

2 - What kind of equipment do you usually use?

- ☐ Brand and type of machine
- ☐ None

3 - Do you routinely perform molecular diagnosis?

- ☐ YES
- ☐ NO

If yes:

- ☐ On which diseases?
- ☐ Which gene(s) do you amplify?

4 - State one main drawback and one advantage of conventional PCR?

- ☐ Drawback:
- ☐ Advantage :

5 - Paul received in his laboratory 4 samples with a suspicion of *Mycoplasma pneumoniae*. He prepared a PCR mix and the PCR reaction according to the following table:

<u>MIX PCR pour 1 réaction</u>		<u>Conditions de la réaction de PCR</u>		
Tampon PCR 10X	5 μ l	94°C	2 min	1 cycle
Mix dNTP contenant 10mM de chaque dNTP):	0,5 μ l	94°C	30 sec	30 cycles
primer spécifique sens 20 μ M	1 μ l	55°C	30 sec	
primer spécifique reverse 20 μ M	1 μ l	72°C	30 sec	
Enzyme Taq DNA polymérase	0,5 μ l			
ADN	2 μ l	72°C	7 min	
H2O	40 μ l	4°C	over night	

After migration of 10 μ l of the PCR reactions, all results were negative including the positive control. If you were Paul, what would be your first hypothesis to explain this unexpected result?

.....

.....

.....

.....

.....



One Health and Integrated Health Approaches

Scientific coordinator
(Delivered in French)

J . CAPPELLE
(Cirad UMR ASTRE)

2 weeks

12 – 23 November 2018



This training module provides an introduction to One Health and EcoHealth approaches. The multidisciplinary features of these two approaches are examined to enable participants to consider the complexity of socio-ecological systems and their impact on the health of both animals and humans. Different disciplines (ecology, geography, anthropology, sociology...) that can contribute to a better understanding of health issues are presented through practical examples highlighting the methods and indicators used in One Health and other integrated approaches, alongside their advantages and disadvantages. Participatory and qualitative investigative methods are examined in particular, as well as methods which allow the integration of different disciplines.

Course objectives

By the end of the training, participants will have a better understanding of One Health and integrated Health approaches. They should be able to:

- understand the key theories, concepts and models in One Health and integrated Health approaches;
- understand the fundamental principles of eco-epidemiology, wildlife ecology and host-parasite interactions in relation to health;
- understand the correlations between biodiversity and health;
- know the methods and techniques used in the management of wildlife and animal and zoonotic diseases at the interface of domestic animals;
- identify and manage the social and behavioural factors affecting human and animal health (surveillance and control);
- understand the principles and areas of application of health geography: social science of space;
- collect and analyze qualitative data;
- understand open and semi-structured interview techniques;
- understand the principles of participatory epidemiology;
- analyse qualitative data using content analysis.

Audience

Due to the multidisciplinary nature of One Health and EcoHealth approaches, this course is open to anyone concerned by or interested in animal and human health management issues (doctors, veterinarians, epidemiologists, but also ecologists, sociologists, anthropologists, geographers, modelers, etc.). Candidates may work in different sectors (government ministries, research organizations, industry, NGOs...).

All candidates must have a good command of French.



Programme

(indicative)



This module is part of the GIMAT master's programme.

- Presentation of One Health and EcoHealth approaches
- Introduction to ecology, geography, sociology and anthropology related to health
- Presentation of participatory, qualitative and integrative methods
- Practical tutorials

Field trip, wildlife monitoring methods in ecology and epidemiology

Cost

- Training cost : €2,000
- Travel to Montpellier : to be determined by the participant
- Housing expenses : allow a minimum of about €90/day

If necessary, a customized estimate can be established upon request, especially when two or more courses are attended.



Important

CIRAD cannot provide study grants. If you wish to request a grant, submit an application as soon as possible to national authorities in charge of livestock and/or scholarships; Cooperation and Cultural Action Services (SCAC) of your local French Embassy; the embassies of other countries; international organizations (FAO, UNDP, EU, IAEA, IDB ...); development projects or NGOs.

Application procedure

Applications, consisting of a detailed resume, a motivation letter and details about the organization managing your grant, must be sent if possible before

12 October 2018

by email: formation-emvt-fvi@cirad.fr.



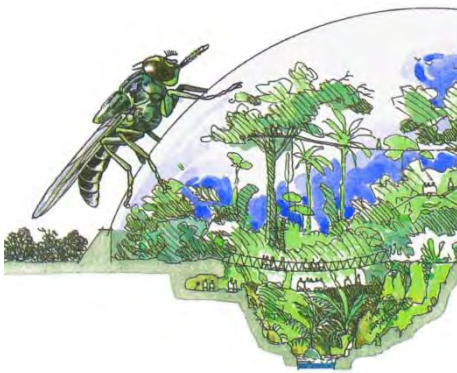
See our other trainings : <http://formation-elevage-suds.cirad.fr>

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Modular training



Ecology and Integrated Vector Control

(Delivered in French)



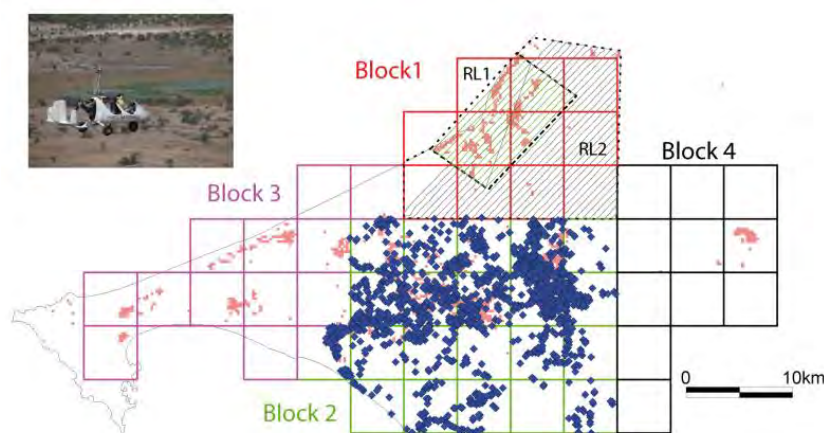
Scientific coordinators

T. BALDET – S. RAVEL – F. STACHURSKI – S. THEVENON
(Cirad/IRD UMRs ASTRE & INTERTRYP)

1 week
10-14 December 2018

The development of strategies and methods for the control of human and animal disease vectors is an important part of the work of researchers at CIRAD UMRs [ASTRE](#) and [Intertryp](#).

This module aims to describe integrated, innovative and environmentally friendly approaches to vector control implemented at different scales (livestock farm, village and region, including Area-wide Integrated Pest Management) by presenting the main methods of vector control (chemical, physical, biological, genetic). The groups of arthropod vectors featured (tsetse flies, ticks, Culicoides, mosquitoes, mechanical vectors) are the most important in terms of public and veterinary health, especially in the tropics. Participants will learn that integrated control is based on a thorough understanding of the biology and ecology, including behavioural, of the targeted arthropod populations.



Course objectives

By the end of the course, participants will be able to:

- study the targeted vector populations to choose the most appropriate control strategies;
- be familiar with the main vector control methods for each vector group targeted;
- understand the strategic choices made by vector control operators between elimination and vector control;
- understand how different control methods interact and can be combined;
- anticipate the environmental impacts and the societal, economic and ethical dimensions of vector control campaigns.

Audience

This course is open to veterinarians, agronomists and engineers working in the field of animal husbandry, animal health or wildlife management in the tropics who wish to strengthen their skills. Candidates who do not belong to these categories but who have sufficient professional experience are welcome to join the course.

All candidates must have a good command of French.



This module is part of the GIMAT master programme.

Programme

Partnerships

With the participation of IRD's UMR MIVEGEC.

This training program is possible thanks to the unique complementarity of the disciplines present in the research units involved. It is based on activities conducted in continuous interaction between researchers working in the North and South, with some conducted entirely by Southern partners.



Cost

- Training cost : €1,300
- Travel to Montpellier : to be determined by the participant
- Housing expenses : allow a minimum of about €90/day

If necessary, a customized estimate can be established upon request, especially when two or more courses are attended.

Important

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Application procedure

Applications, consisting of a detailed resume, a motivation letter and details about the organization managing your grant, must be sent if possible before:

9 November 2018

by email: formation-emvt-fvi@cirad.fr



See our other trainings : <http://formation-elevage-suds.cirad.fr>

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**CIRAD-FVI – Capacity Building Platform for Livestock Management and
Animal Health in the Global South**

formation-emvt-fvi@cirad.fr



Modular training

- Investigative methods in vector ecology
- Ecology and behaviour of ticks, mosquitoes, Culicoides and tsetse flies
- Integrated control of heartwater & principles of enzootic stability
- Integrated control of African animal trypanosomosis
- Conventional vector control
- Resistance to acaricides in ticks
- Resistance to insecticides in mosquitoes
- AW-IPM: Area-wide Integrated Pest Management
- Mechanical tsetse flies control
- Alternative tick control methods
- Sterile Insect Technique (SIT)
- Genetic vector control
- Biological biting flies control
- Use of trypanotolerant breeds

**Practical exercises and visit to CIRAD's
insectarium in Baillarguet**



Intervention Epidemiology

(Delivered in French)



Scientific coordinators

C. SQUARZONI-DIAW (Cirad UMR ASTRE)

A. WARET SZKUTA (ENVT)

1 week

17-21 December 2018

Given the current spread of pathogens and health risks, countries need to strengthen their disease surveillance and early-warning capabilities in the field.

The work of field epidemiologists is vast and serves to provide rapid and concrete responses to health problems at the population level in order to inform animal health decisions. The practice of epidemiology still applies to other areas. Intervention epidemiology, or field epidemiology, is closely related to other disciplines (health economics, statistics applied to epidemiology, risk assessment, disease surveillance, environmental risk, health policies, social sciences...).

Intervention epidemiology brings together several specific activities, including epidemiological investigation, assessment of the situation and risks, data processing...

This module provides students and professionals with a review of the key principles of field epidemiology. Scenarios, knowledge of intervention methods and innovative tools in applied epidemiology, an on-site scenario and a virtual case study are important components of this module.



Course objectives

The "Intervention Epidemiology" module aims to equip participants with the capacity to apply modern epidemiological approaches to control an epidemic in a population, understand a crisis situation and assess the risks, detect and investigate outbreaks and assess the impact of control measures on health problems.

Through case studies, theoretical & practical concepts and scripted exercises, participants will learn to apply the principles and methods of intervention epidemiology and to use innovative methods for the analysis of relevant data.

At the end of the course, participants will be able to:

- understand the main principles of field epidemiology;
- understand the key concepts to coordinate an epidemiological investigation;
- conduct a systematic risk assessment in order to support health decisions;
- implement a methodical approach to outbreak investigation;
- construct a survey questionnaire and conduct a systematic collection of data.

Audience

This course is open to holders of a Diploma of Fundamental Veterinary Studies awarded by a French National Veterinary School (or a recognized equivalent diploma/agronomist, engineer, university with a first year master's level...) or any health professional (public or veterinary) responsible for field investigation. Foreign diplomas must be recognized as being equivalent to a first year master's degree in the French education system (M1). Applicants must also have a good command of French.



This module is part of the GIMAT Master's programme.

Programme

Partnerships

With the participation of the National Veterinary school of Toulouse (ENVT).

This training programme is possible thanks to the unique complementarity of the disciplines present in the institutions involved. It is based on activities conducted through continuous interaction between researchers working in the North and South.

Cost

- Training course : €1,300
- Travel to Montpellier : to be determined by the participant
- Housing expenses : allow a minimum of about €90/day

If necessary, a customized estimate can be established upon request, especially when two or more courses are attended.

- Main principles of field epidemiology
- Design a questionnaire & online questionnaire
- Warning signals
- Outbreak investigation procedure
- Case study of applied epidemiology
- Field survey preparation (methodology, questionnaire, logistics)
- Modern investigative methods & use of digital tools
- Analysis of data collected
- Feedback from the field

Field simulation (farm visit)

Important

CIRAD cannot provide study grants. If you wish to request a grant, submit an application as soon as possible to national authorities in charge of livestock and/or scholarships; Cooperation and Cultural Action Services (SCAC) of your local French Embassy; the embassies of other countries; international organizations (FAO, UNDP, EU, IAEA, IDB ...); development projects or NGOs.

Application procedure

Applications, consisting of a detailed resume, a motivation letter and details about the organization managing your grant, must be sent if possible before:

30 November 2018

by email: formation-emvt-fvi@cirad.fr



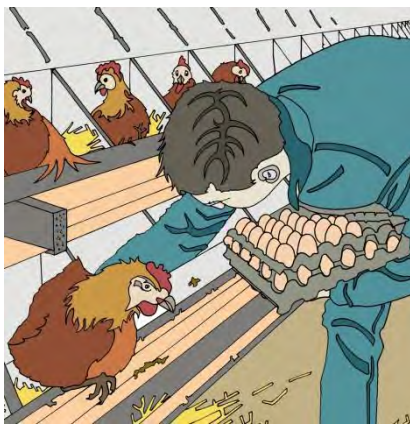
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**CIRAD-FVI – Capacity Building Platform for Livestock Management and
Animal Health in the Global South**

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Livestock systems in the world: Dynamics and Analysis Tools (Delivered in French)



Scientific coordinators

C-H MOULIN, C Aubron

(Montpellier SupAgro, Cirad UMR SELMET)

4 weeks

17 September - 12 October 2018

Animal husbandry plays a number of roles, enabling the production of market goods (milk, meat, eggs...), fulfilling social functions (combating poverty and enhancing food security), and contributing to the preservation of landscapes and biodiversity. It thus can contribute to the sustainable development of territories.

In different contexts, animal husbandry can vary greatly in terms of form and organization. It is also subject to varying change dynamics in response to constraints (changes in climate or land use) and opportunities (development of markets for animal products). This diversity and these dynamics are the results of decisions made by livestock farmers, who generally organize their activities within family production units in interaction with other sector and territorial actors.

Given this complexity, the factors behind the diversity of livestock production and the drivers of ongoing change need to be understood. The capacity of livestock farms to continue operating in a changing and uncertain environment and to contribute to sustainable development also must be assessed. Strategies and policies intended to support livestock farmers must be based on this understanding and assessment.

Systemic analysis is a powerful tool for understanding and evaluating complex situations. It makes it possible to distinguish different levels of spatial and temporal organization of agricultural activities: agrarian system, production system, farming systems.

Course objectives

The overall goal of this module is to train participants in the systemic analysis of livestock farming. By the end of the training, participants will be able to:

- understand the key features of the evolution of global agrarian systems and the role of livestock farming in these systems (from the Neolithic revolution to the present day);
- understand the different factors behind these historical developments;
- understand the role of the socioeconomic environment, markets, and livestock policies on current dynamics;
- understand the concepts, approaches and methods for analyzing livestock systems based on a comprehensive approach to livestock farmers' practices;
- carry out a comprehensive analysis and diagnosis of a livestock production unit.

Modular training

Audience

This course is open to agronomists and veterinarians involved in training, research or supervision in the field of animal production.

Candidates who do not belong to these categories but who have sufficient professional experience also may join the course. All candidates must have a good command of French.



This module is part of the “Livestock Farming Systems” specialization of Montpellier SupAgro’s Master 3A program.



Programme (indicative)

Partnerships

This module is taught by Montpellier SupAgro animal science teachers based on work carried out in collaboration with INRA and CIRAD colleagues from the SELMET Joint Research Unit. Professionals from technical institutes (Institut de l'Elevage, ITAVI, etc.) and from FranceAgriMer also collaborate to the training.

Cost

- Training cost : €2,000
- Travel to Montpellier : to be determined by the participant
- Housing expenses : allow a minimum of about €90/day

If necessary, a customized estimate can be established upon request, especially when two or more courses are attended.

- Evolution of agrarian systems and the role of livestock farming
- Livestock markets and policies
- Analysis of livestock farmers’ practices: concepts and tools for analysis
- Economic assessment of production systems
- Methods of collecting data in the livestock farming sector
- Surveys using interviews and data processing
- **Classroom case study:** free-range suckler ewe farming
- **Field case study:** working in small groups, conducting a diagnosis on a livestock farm

Important

CIRAD cannot provide study grants. If you wish to request a grant, submit an application as soon as possible to national authorities in charge of livestock and/or scholarships; Cooperation and Cultural Action Services (SCAC) of your local French Embassy; the embassies of other countries; international organizations (FAO, UNDP, EU, IAEA, IDB ...); development projects or NGOs.

Application procedure

Applications, consisting of a detailed resume, a motivation letter and details about the organization managing your grant, must be sent if possible before:

1 August 2018

by email: formation-emvt-fvi@cirad.fr



See our other trainings : <http://formation-elevage-suds.cirad.fr>

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Pastoralisms

(Delivered in French)



Scientific coordinators

J. HUGUENIN - M. JOUVEN - C-H. MOULIN
(Cirad /SupAgro UMR SELMET)

3 consecutive weeks
18 October – 9 November 2018

Pastoral systems based on a close association between humans, domestic ruminants and natural environmental issues historically have contributed to meeting the food, economic and cultural needs of populations in many countries around the world. Recent developments in societies (monetization, globalization, productivism, land pressure...) and environments (drought, climate change, desertification...) have called into question the value of these livelihood and production systems.

However, new global challenges involving sustainable development, poverty alleviation, ecosystem preservation, dryland development and ecological intensification of agriculture have refocused attention on these systems in order to identify new development pathways and new modes of agricultural production around the Mediterranean basin and in tropical regions.

This course offers a multidisciplinary approach to the functioning of pastoral systems and their current and potential role in sustainable development, and provides a framework and tools to assess their relevance and potential in different development contexts.

Course objectives

This module places pastoralism within a historical context, examining it from the scale of the herd up to the territory. Special attention is devoted to interactions between pastoral systems and their physical (grazed vegetation, water resources...) and socio-economic environments (pastoral societies, value chains, territories).

At the end of the course, participants will be able to:

- describe the different forms of organization of animal production in pastoral societies and processes of change leading towards agro-pastoral livestock production;
- understand the biological basis of pastoralism and deduce methodological principles to analyse the use of plant resources by flocks and herds;
- describe the main principles of the social management of resources (land, water) in pastoral societies (resource sharing, reciprocity, mobility, crisis management...);
- Present tools, policy and institutional actions to support stakeholders in negotiations on resource management at different scales (from local to international).

Modular training

Audience

This course is open to agronomists and veterinarians involved in training, research or supervision in the field of animal production or natural resource management who wish to take into account the dimension of animal husbandry on rangelands (pastoral or agropastoral) in the planning and implementation of their activities.

Candidates who do not belong to these categories but who have sufficient professional experience are also welcome to join the course.

All candidates must have a good command of French.



This module is part of the “Livestock Farming Systems” specialization of Montpellier SupAgro’s Master 3A program.



Programme



"Crédit photo CIRAD"

The module is organized in three parts which take place over 3 weeks, and include 2 to 3 days in the field:

- Diversity of pastoralism: forms, challenges, research questions and development
- The biophysical bases of pastoralism: herds, flocks, vegetation and pastures
- Access to grazing resources: social management of resources, analysis and action tools

Cost

- Training cost : €1,300
- Travel to Montpellier : to be determined by the participant
- Housing expenses : allow a minimum of about €90/day

If necessary, a customized estimate can be established upon request, especially when two or more courses are attended.



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Important

CIRAD cannot provide study grants. If you wish to request a grant, submit an application as soon as possible to national authorities in charge of livestock and/or scholarships; Cooperation and Cultural Action Services (SCAC) of your local French Embassy; the embassies of other countries; international organizations (FAO, UNDP, EU, IAEA, IDB ...); development projects or NGOs.

Application procedure

Applications, consisting of a detailed resume, a motivation letter and details about the organization managing your grant, must be sent by email to:

formation-emvt-fvi@cirad.fr



See our other trainings : <http://formation-elevage-suds.cirad.fr>

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Interactive R: building web applications with Shiny

(Delivered in French)

Instructor
Sylvain Falala

(Cirad/INRA UMR ASTRE)



2 days

19 - 20 June 2018

Sharing your research results via the internet and in an interactive way has become easy with tools like R Shiny (<http://shiny.rstudio.com/>) , allowing you to quickly build web applications and avoid more complex programming in other languages.

Interactive displays of graphs, tables, maps... can easily be developed with Shiny and its dedicated libraries.

Shiny thus makes it possible to create engaging and attractive interfaces which are excellent communication tools.

Course objectives

By the end of the training course, participants will be able to build a web application with R Shiny. More specifically, they will know how to:

- structure the application by distinguishing the different files and basic files;
- create the interface by programming with dedicated functions;
- manage interactions to modify the display according to the input parameters;
- enrich the application by fine-tuning interactions and developing sophisticated interfaces;
- upload the application online.

Audience

This course is intended for anyone (student, researcher, engineer, technician ...) who needs to set up an interactive representation of data processed with R.

Basic knowledge of R software is required.

Knowledge about programming with functions is desirable.

The course is limited to a maximum of 12 participants.

Modular training

Programme



Structure the application

- The different code files for the interface, interactions and global variables
- The files depending on the content (data, images, external code...)

Create the interface

- Outputs/displays: tables, images, graphs, texts...
- Inputs/controls: buttons, checkboxes, drop-down lists...

Manage the interaction

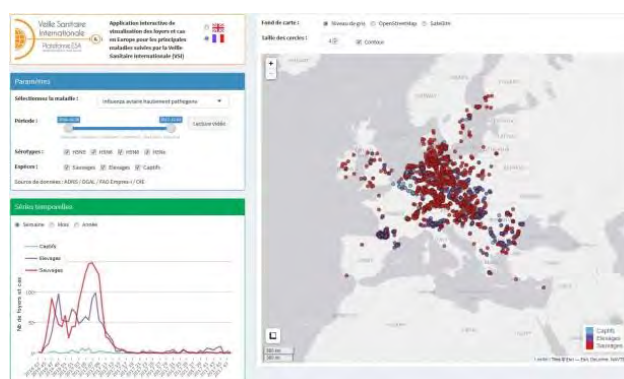
- Rendering functions and link with display functions
- Reactive programming: inputs in rendering functions, observers

Enrich the application

- Interaction: variables and reactive expressions, isolation, timer
- Interface: layouts, panels, shinyjs and shinydashboard packages
- Interactive maps with the Leaflet package, interactive graphs with the Plotly package

Upload the application

- Presentation of shinyapps.io
- Information for setting up a Shiny server



If necessary, a customized estimate can be established upon request, especially when two or more courses are attended.

Cost

- Training course : €800
- Travel to Montpellier : to be determined by the participant
- Housing expenses : allow a minimum of about €90/day

Important

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Application procedure

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See our other trainings : <http://formation-elevage-suds.cirad.fr>



From Field Data to Online Maps (Delivered in French & English)



Scientific coordinators

D. CHAVERNAC (Cirad UMR ASTRE)
A. CLOPES (Cirad UMR Tétis)
C. COSTE (Cirad UMR ASTRE)
J-B. LAURENT (Cirad UR Aïda)

1 week
25 - 29 June 2018
or 17 - 21 December 2018

Internet and mobile technologies have developed extensively in the southern hemisphere, especially in areas in Africa that until only recently had remained remote.

The widespread use of mobile technologies in the field opens up new ways of generating and disseminating knowledge through the:

- acquisition of georeferenced information by multiple users using their smartphones,
- integration of this information into a Geographic Information System (GIS),
- development and distribution via the internet of thematic maps based on the analysis of collected data.

Course objectives

By the end of the course, participants will be able to:

- create a mobile application for data collection and deploy it in the field;
- integrate mobile data into a GIS;
- develop maps using the data collected;
- deploy these maps on the internet without needing software development;
- share GIS information with colleagues.



Modular training

Audience

No particular technical knowledge is required to participate in this course, but some familiarity with a GIS program will help you get the most out of the training. Candidates must be comfortable with computers (knowledge of the Windows environment) and basic office software concepts such as file management and Excel. The training course is delivered in French and English.



Programme

The course consists of 3 modules delivered over 5 days:

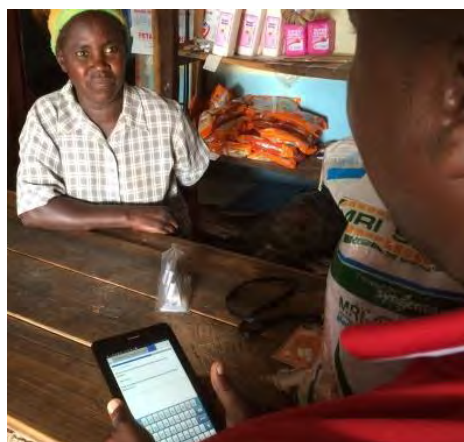
- Creating a mobile data collection application and using it in the field: 1.5 days
- Processing data using QGIS: 2 days
- Publishing data on the internet using Lizmap: 1.5 days



Cost

- Training cost : €1,800
- Travel to Montpellier : to be determined by the participant
- Housing expenses : allow a minimum of about €90/day

If necessary, a customized estimate can be established upon request, especially when two or more courses are attended.



Important

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Application procedure

Applications, consisting of a detailed resume, a motivation letter and details about the organization managing your grant, must be sent **as soon as possible**

by email: formation-emvt-fvi@cirad.fr



See our other trainings : <http://formation-elevage-suds.cirad.fr>



Data Management applied to Epidemiological Surveillance

(Delivered in French)



Scientific coordinators

D. CHAVERNAC, X. JUANES
(Cirad UMRs ASTRE & SELMET)

1 week

26 - 30 November 2018

The establishment of epidemiological surveillance networks generates the collection of large amounts of data. These data need to be managed correctly to extract the health information that can enable animal health officials to make the most relevant intervention decisions. Due to the diversity and complexity of the data collected by surveillance networks, global information systems must be established to achieve three main objectives:

- the regular publication of health situation summaries;
- the calculation of performance indicators;
- the editing of network management settings.

The collection of data in the field, and the management and processing of this data, is thus a priority for those analysing the information collected by an epidemiological surveillance network, as well as for units responsible for health interventions in the field.



Course objectives

By the end of the course, participants will be able to:

- design a data collection tool in the field;
- design a data base;
- build simple queries;
- create user-friendly and intuitive input interfaces (using Relational Database Management Systems).

Modular training

Audience

This training is open to veterinarians, agricultural engineers and holders of a Master's degree or equivalent in subjects compatible with the course.

Candidates who do not belong to these categories but who have sufficient professional experience are also welcome to join the course.

Candidates must be comfortable with computers (knowledge of the Windows environment) and basic office software concepts: file management, Word, Excel.

All candidates also must have a good command of French.



This module is part of the SEMHA and GIMAT master's programs.



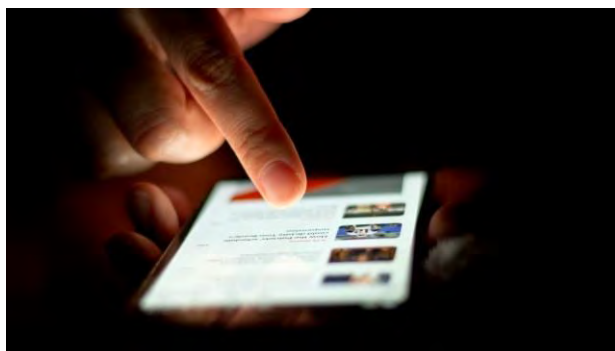
Cost

- Training cost : €1,100
- Travel to Montpellier : to be determined by the participant
- Housing expenses : allow a minimum of about €90/day

If necessary, a customized estimate can be established upon request, especially when two or more courses are attended.

Programme

- Design a mobile application for collecting data
- Discover and get started with relational data bases
- Practical exercises



Important

CIRAD cannot provide study grants. If you wish to request a grant, submit an application as soon as possible to national authorities in charge of livestock and/or scholarships; Cooperation and Cultural Action Services (SCAC) of your local French Embassy; the embassies of other countries; international organizations (FAO, UNDP, EU, IAEA, IDB ...); development projects or NGOs.

Application procedure

Applications, consisting of a detailed resume, a motivation letter and details about the organization managing your grant, must be sent if possible before:

26 October 2018

by email: formation-emvt-fvi@cirad.fr



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Information Systems applied to Epidemiological Surveillance

(Delivered in French)



Scientific coordinators

D.Chavernac, X.Juanès & D.Kassié
(Cirad UMRs ASTRE et SELMET)

3 weeks

26 November - 14 December 2018

The establishment of epidemiological surveillance networks generates the collection of large amounts of data. These data need to be managed correctly to extract the health information that can enable animal health officials to make the most relevant intervention decisions. Due to the diversity and complexity of the data collected by surveillance networks, global information systems must be established to achieve three main objectives: the regular publication of health situation summaries, the calculation of performance indicators and the editing of network management settings.

A geographic information system (GIS), as an integral part of a global information system, is a tool that enables the geographic representation and analysis of spatial data.

Based on information gathered from the data collected through the global information system, it can, for example, allow the representation of all outbreaks reported for a disease, as well as their evolution in time and space. It is also easy to clearly visualize the animal population at risk as well as the means of intervention that may be available on the ground. By enabling the creation and the rapid and easy updating of maps representing a health situation highlighted by an epidemiological surveillance network, GIS provides public animal health authorities key elements for relevant and effective decisions.

The collection and processing of epidemiological data has thus become a priority for those in charge of analysing the information collected by an epidemiological surveillance network, as well as for units responsible for public health interventions in the field.

Course objectives

By the end of the course, participants will be able to design an information system for an epidemiological surveillance network that is intended to manage information from the field up to its presentation. This includes:

- creating models for data management;
- analysing data through simple queries;
- setting up input interfaces (using Access);
- conducting thematic analyses and simple queries to represent and interpret data and produce maps to support decision-making.

Modular training

Audience

This course is open to veterinarians and zootechnicians responsible for setting up and operating epidemiological surveillance networks. Candidates who do not belong to these categories but who have suitable professional experience are also welcome to join the course.

Candidates must have a good command of French and be familiar with the Windows environment. Some experience, even if limited, in the handling and processing of data is a plus.



This module is part of the SEMHA and GIMAT master's programs.

Programme

- **Databases applied to epidemiological surveillance**
discovering and getting started with Access
- **GIS applied to epidemiological surveillance**
prise en main d'ArcGis 9.x, cartographie, objets géographiques, mise en forme de cartes
- **Practical applications**

Cost

- Training course : €2,500
- Travel to Montpellier : to be determined by the participant
- Housing expenses : allow a minimum of about €90/day

If necessary, a customized estimate can be established upon request, especially when two or more courses are followed.

Important

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Application procedure

Applications, consisting of a detailed resume, a motivation letter and details about the organization managing your grant, must be sent if possible before:

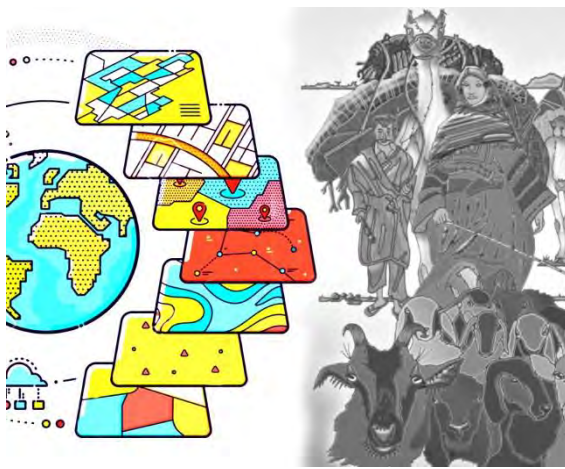
26 October 2018

by email: formation-emvt-fvi@cirad.fr



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GIS applied to Epidemiological Surveillance

(Delivered in French)



Scientific coordinator

D. KASSIE

(Cirad UMR ASTRE)

**1 to 2 weeks
3 - 14 December 2018**

Epidemiology, and particularly epidemiological surveillance, seeks to represent the situation of a disease in a given area in order to take appropriate control measures or to develop hypotheses about the disease's origin and risk of dissemination.

A geographic information system (GIS) is a tool that enables the geographical representation of data. Coupled with the database of an epidemiological surveillance network, GIS can be used to map the outbreaks reported for a disease as well as their evolution in time and space. It also makes it possible to clearly visualize the animal population at risk, the risk factors, and the means of intervention that may be available on the ground.

By enabling the creation and the rapid and easy updating of maps representing a health situation highlighted by an epidemiological surveillance network, GIS provides public animal health authorities key elements for relevant and effective decisions.

Mastering a geographic information system has thus become a priority for those responsible for managing and analysing epidemiological data, as well as for services in charge of managing health interventions in the field.

Course objectives

By the end of the course, participants will be able to:

- master all of the basic functions of ArcGis 10.x software for creating maps;
- connect a database with this GIS software and represent the distribution of an animal disease and its evolution over time and space;
- conduct thematic analyses and make simple queries to represent and interpret data and produce maps to support decision-making.

Modular training

Audience

All candidates must have a good command of French.

Week 1

This training course is for veterinarians, agricultural engineers and holders of a Master's degree or equivalent in subjects compatible with the content of the course.

Candidates who do not belong to these categories but who have sufficient professional experience also may join the course.

Candidates must be comfortable with computers (knowledge of the Windows environment) and basic office software concepts: file management, Word, Excel.

Week 2

Master the basic functions of ArcGis 10.



This module is part of the SEMHA and GIMAT master's programmes.



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Programme

Week 1: Getting started

- Concepts and becoming familiar with ArcGis 10.x (concept of GIS, introduction to ArcGis 10.x and presentation of functions).
- Mapping (design, trim, concepts of geo-referencing and projection, use of GPS receivers, acquisition and manipulation of geographic data, thematic analyses).

Week 2: Deeper understanding

- Application to epidemiological data (practical exercises, development of analysis, interpretation)
- Spatial analyses (raster and vector operators, creation of a processing chain)
- Presentation of open-source GIS software

Cost

- Training cost : €800 for 1 week or €1,500 for 2 weeks
- Travel to Montpellier : to be determined by the participant
- Housing expenses : allow a minimum of about €90/day

If necessary, a customized estimate can be established upon request, especially when two or more courses are attended.

Important

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Application procedure

Applications, consisting of a detailed resume, a motivation letter and details about the organization managing your grant, must be sent if possible before:

2 November 2018

by email: formation-emvt-fvi@cirad.fr



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Applied training: Bases in Statistical Analyses with R (Delivered in French and English)



Scientific coordinator
S. Thévenon
(Cirad/IRD, UMR INTERTRYP)

**1 week
date to determine depending on the request**

Data analysis is omnipresent in the research work. Unfortunately, poor design of an experiment or poor analysis of data can lead to the absence of interpretable results or to erroneous conclusions. Understanding the basic concepts of statistics is essential for the effective leading of a research project. Associated with this, the use of the R software allows simple, rapid and reproducible analyzes.

Course objectives

The main objective is to acquire the theoretical and practical bases of statistical analysis, applied to field or experimental data.

The training is composed of theoretical courses, tutorials and practical work on computer with software R.

Specific objectives:

- understand the notion of random variables, the causes of variability and know the main distributions;
- Calculate the standard parameters and observe graphically the data with R;
- Understand the central limit theorem;
- Know the criteria for choosing the various tests;
- Design an experimental plan;
- Carry out a data analysis with R: graphical observation, calculation, carrying out a simple test and interpretation;
- Understand and perform a linear regression with R;
- Ensure the traceability of the analyzes and be able to reproduce them.

Audience

This workshop is for students (Bachelor's degree+ 2 years), technicians (Bachelor's degree + 2 years), engineers or researchers wishing to acquire the bases in data analysis with R, for a practical use afterwards.

Prerequisites: Feel like learning!

Know how to manipulate files in Excel.

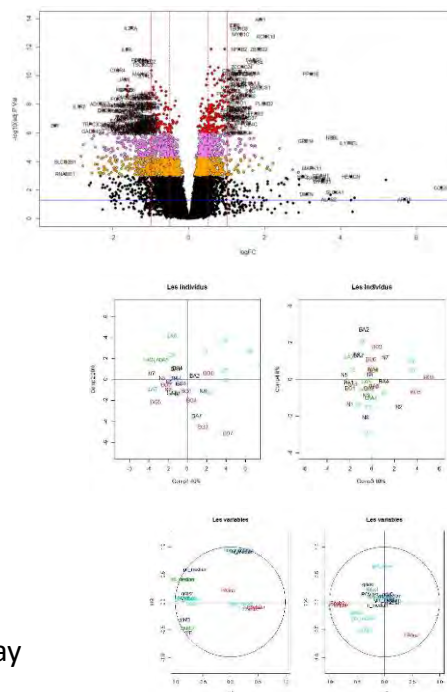
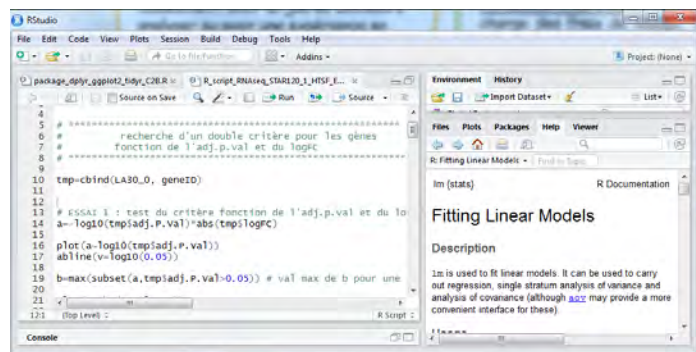
Ideally, have a set of data to analyze or have an experience to plan or in progress, for a short-term analysis.

Program and Organisation



- **Courses:** Theoretical presentations in PowerPoint, alternating with practical work with R, with simulated or real datasets and pre-established R scripts
- **Training at CIRAD in Montpellier (France)** (campus international de Baillarguet)
Number of participants: maximum 10
- **Itinerant training by invitation:** Support of the travel expenses, accommodation and expertise of the trainer(s) by the host organization with provision of a room equipped with computers for at least 1 student out of 2.

This training is on a full-time week. It can be delivered in French or English upon request.



Cost

- Training cost at Cirad: €1,000
- Itinerant training with invitation: please contact us
- Travel expenses: not included
- Housing expenses: not included, plan a minimum of €90 a day

If necessary, a customized quote can be established upon request.

Important

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Application procedure

Applications, consisting of a detailed resume, a motivation letter and details about the organization managing your grant, must be sent by email to formation-emvt-fvi@cirad.fr.



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Engineering e-learning training

(Delivered in French)



Scientific coordinators

M. Dufour– C. Squarzoni-Diaw
(Cirad Dgdrs - UMR ASTRE)

1 week

28 January – 1 February 2019

New information and communication technologies (ICTs) include digital tools and products that can be used in education and training (NICTE = NICT + Education).

They make it possible to reach an increasingly wider audience and to propose new kinds of training programs (in terms of the materials used and forms of organization). In particular, digital training (e-learning) permits the dissemination of knowledge in diverse fields of expertise.

To enable our partners to set up innovative training programs tailored to their audiences and needs, we offer our expertise in engineering e-learning training and multimedia educational programs. This training course is distinctive because it takes into account the specific features of countries in the Global South and can be adapted to all projects intending to use (partially or totally) e-learning.



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Course objectives

By the end of the course, participants will be able to:

- develop a digital training program: estimate the training needs and define clear learning objectives;
- define and use basic methodological tools of educational engineering (from teaching scenarios to evaluating the training activity);
- understand e-learning and multimedia content creation software, as well as LMS (learning management systems);

This course alternates theory with practical exercises that will allow you to start producing your own media-based training product (sound, video, animation, etc.).

Audience

This training is intended for professionals active in the field of continuing education or teaching and/or knowledge transfer activities.

Participants should already have formulated an educational project which can be further developed during the course with regard to its implementation and target audiences (students, professionals).

Candidates must be familiar with computers and basic office software concepts.

A minimum of 8 participants is required for the course.

Course content and location can be modified upon request:

- on-site session in Montpellier,
- off-site session in your country.

This training can be organized upon request at any time during the year.



Cost

- Training cost : €1,100
- Travel to Montpellier : to be determined by the participant
- Housing expenses : allow a minimum of about €90/day

If necessary, a customized estimate can be established upon request, especially when two or more courses are attended.

Programme

- The basic principles of distance learning
- Distance learning engineering
- Multimedia educational engineering
- Tools for creating content and providing distance learning courses



Credit photo CIRAD

Important

CIRAD cannot provide study grants. If you wish to request a grant, submit an application as soon as possible to national authorities in charge of livestock and/or scholarships; Cooperation and Cultural Action Services (SCAC) of your local French Embassy; the embassies of other countries; international organizations (FAO, UNDP, EU, IAEA, IDB ...); development projects or NGOs.

Application procedure

Applications, consisting of a detailed resume, a motivation letter and details about the organization managing your grant, must be sent if possible before:

15 December 2018

by email: formation-emvt-fvi@cirad.fr



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Original illustrations: **Géraldine Laveissière**, Cirad /Astre.

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